

Notice of Allowability

Application No.

10/726,868

Applicant(s)

OKOROANYANWU ET AL.

Examiner

Asok K. Sarkar

Art Unit

2891

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to response filed 9/14/2005.
2. ☒ The allowed claim(s) is/are 1-7 and 9-17.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413), Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

DETAILED ACTION

Election/Restrictions

1. Applicant's election of Group I claims 1 – 7 and 9 – 17 with traverse in the reply filed on September 14, 2005 is acknowledged. Because applicant did not distinctly and specifically point out the ground for traversal in the restriction requirement, the election has been treated as being made without traverse (MPEP § 818.03(a)).

EXAMINER'S AMENDMENT

2. In view of the allowable subject matter, the Applicant's representative was contacted for canceling the nonelected claims.

3. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Jeff Sadlowski on September 29, 2005.

The application has been amended as follows:

Claims 8 and 18 – 23 have been cancelled.

In claim 15, line 2, following the word "least", the word "off" has been replaced by "one".

Allowable Subject Matter

4. Claims 1 – 7 and 9 – 17 are allowed.

5. The following is an examiner's statement of reasons for allowance:

Claims 1 – 7 recite, inter alia, a method for dielectric patterning comprising providing a conductive polymer surface, positioning a mask over the polymer surface, and radiating the polymer surface in presence of hydrogen to form positive hydrogen ions that interact with exposed portions of the polymer surface to form a dielectric pattern. Although, Jung, "Modification of Conducting Polymers by Low Energy Reactive Ion Beams and Their Chemical effects", Nuclear Instruments & methods in Physics Research, Section B, Vol. B-80 – 81, Pt. 2, p. 1076 – 9 (1993) teaches modifying the surfaces of the conducting polymers by radiating low energy reactive ion beam containing positive hydrogen ions, he fails to teach positive hydrogen ions interacting with the polymer surface to form a dielectric layer. Additionally, the art of record does not disclose or anticipate the above limitation in combination with other claim elements nor would it be obvious to modify the art of record so as to form a device including the above limitation.

Claims 9 – 17 recite, inter alia, a method for fabricating a memory cell comprising the steps of forming an organic polymer layer over a conductive layer, the conductive layer serving as a bit line, positioning a mask over the organic polymer layer, radiating the polymer surface in presence of hydrogen to form positive hydrogen ions that interact with exposed portions of the polymer surface and form a dielectric on the polymer surface, and forming an electrode layer over the polymer layer with dielectric patterning. Although, Weng, US 6,867,081 and US 6,927,108 teaches converting the surfaces of the conducting polymers to dielectric layers by UV radiation, he fails to teach radiating the polymer surface in presence of hydrogen to form positive

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hydrogen ions that interact with exposed portions of the polymer surface and form a dielectric on the polymer surface. Additionally, the art of record does not disclose or anticipate the above limitation in combination with other claim elements nor would it be obvious to modify the art of record so as to form a device including the above limitation.

Conclusion

6. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Sauerbrey, US 5,689,428 and Kaplan, "Optical and Electrical Properties of Ion – Beam – Irradiated Films of organic Molecular Solids and Polymers", J. Appl. Phys. Vol. 55 (3), p. 732 – 42 (1984) teach methods for modifying conductive properties of polymers by radiation.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Asok K. Sarkar whose telephone number is 571 272 1970. The examiner can normally be reached on Monday - Friday (8 AM- 5 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William B. Baumeister can be reached on 571 272 1722. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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9. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Asok K. Sarkar
September 29, 2005

Primary Examiner